

[0009] The color filter deposition process and its relationship to the microlens array formation process are known to influence the production cycle-time, test-time, yield, and ultimate manufacturing cost.

[0010] A method of making a color filter with less signal deviation and improved yield is
5 desired.

SUMMARY OF THE INVENTION

[0011] A method for processing a semiconductor substrate comprises the steps of:
providing a substrate having at least one filter region with a plurality of bond pads therein,
depositing metal above the bond pads, to reduce a step height thereof, forming a planarization
10 layer such that the deposited metal has a height near to a height of the planarization layer, and
forming the at least one color resist layer above the planarization layer.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. 1 is a plan view showing a plurality of color filter active regions that exhibit
the stripe defect. *TA, 1B are*

15 [0013] FIG. 1C is a cross sectional view showing a conventional color image sensor.

[0014] FIG. 2 is a cross sectional view showing an active region of a color image sensor
formed using an exemplary method.

[0015] FIG. 3 is a plan view of a mask over the substrate shown in FIG. 2.

[0016] FIG. 4 is a cross sectional view showing an active region of a color image sensor
20 formed processed using a different mask.

[0017] FIG. 5 is a plan view of a mask used to deposit resist on the color image sensor
shown in FIG. 4.

[0018] FIGS. 6 to 9 show another exemplary embodiment of a method for fabricating a
color image sensor.

DETAILED DESCRIPTION

25 [0019] U.S. Patent Application No. 10/456,759, filed June 6, 2003, is incorporated by
reference in its entirety, as though set forth fully herein.